

Performance and quality on a higher level: P 500 Power

Topics:

Major greenfield project in the USA

An ambitious project profits from Herkules expertise

Hydro Aluminium relies on Herkules

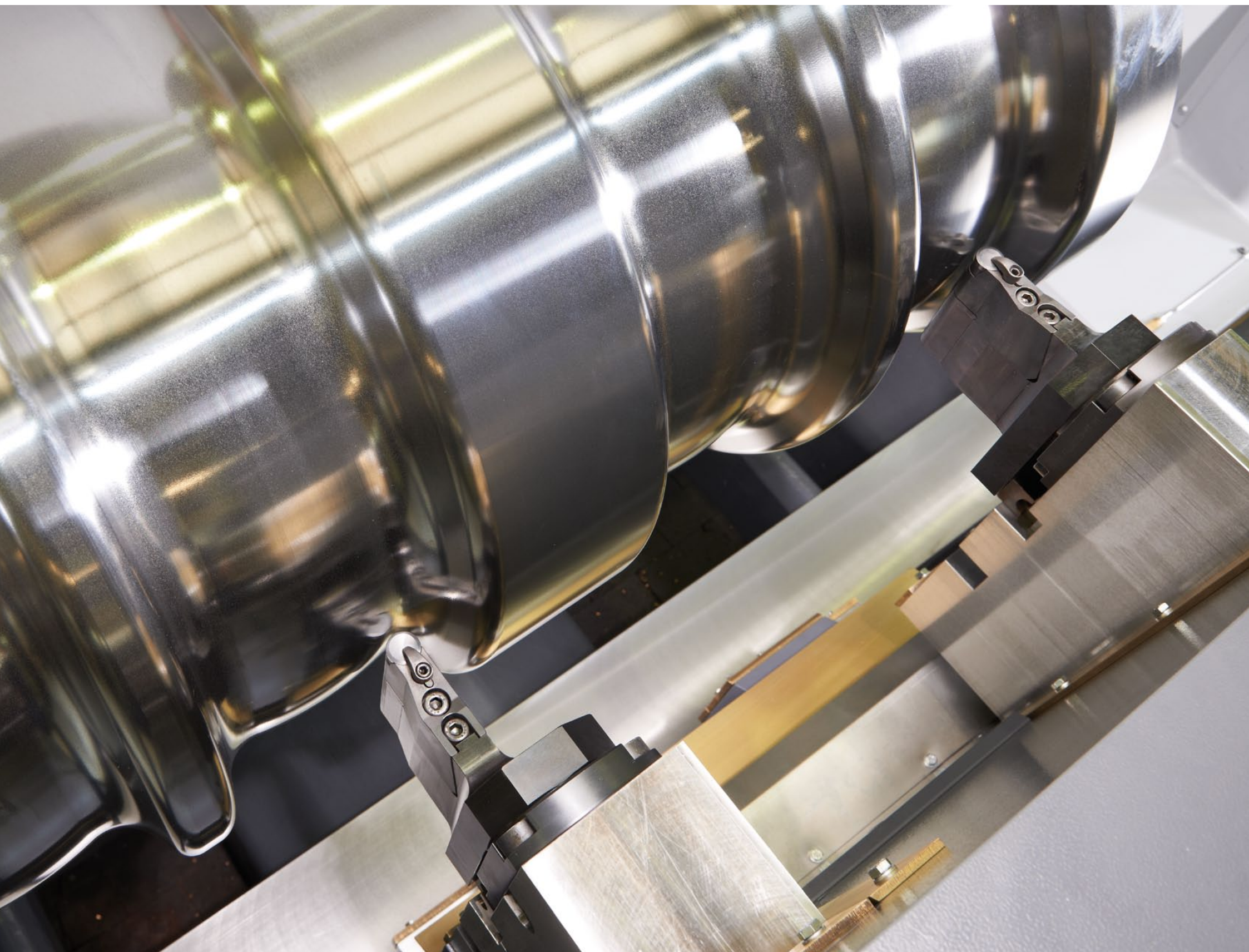
Top quality guaranteed

WS 450 for endless strip mill

Precision, non-stop

HerkulesGroup integrates SBA

Additional know-how



High performance P 500 Power lathe, equipped with support with two slides for the machining of shape rolls

Technically a step ahead: The P 500 Power heavy duty lathe



Newly developed heavy duty lathe P 500 Power for Badische Stahlwerke GmbH



P 500 Power with a one-piece cast iron tailstock and robust guideways

Herkules works incessantly on optimization and technical enhancement of its product portfolio. Constant contact with end users keeps Herkules aware of the demands of everyday practice. This allows it to offer tailor-made solutions. With the further development of the P 500 lathe, Herkules has proved once again that it can meet the complex, increasing demands of the market with technical advances.

For the machining of medium size work pieces, up to a diameter of ca. 1,200 mm, the steel and mechanical engineering industries require powerful machines. The machines need maximum stiffness to achieve superior surface qualities at high removal rates. The Herkules P 500 heavy duty lathe has always excelled in this respect. With its technical innovations, the P 500 Power raises the bar in the market even higher.

Redesign of the guideways

The main design changes concern the guideways of the support and radial facing slide. The facial slide guideway (X-axis) has been transformed into a box guideway system. The result: higher stiffness in the infeed axis of the facing slide. The geometry of the support guideways has also been modified, to a double prismatic design. This makes for considerably higher stiffness. The machine can handle the cutting forces much better. It guarantees vibration-free cuts and superb surface quality.

All-rounder for heavy cutting

Impressed with the performance of the new P 500 Power, Badische Stahlwerke GmbH decided to purchase a machine. Soon, the Herkules lathe will machine the rolls for their shape rolling mill.

Beyond this classic application, the P 500 Power can handle a wide range of tasks that require the machining of large, rotationally symmetric work pieces. A comprehensive spectrum of optional accessories makes it suitable for a wide range of applications. One can equip the lathe as required, with diverse milling or grinding tools, and with closed-loop control for the head stock C-axis.

Guaranteed performance and quality, combined with custom features, – this makes the P 500 Power the all-rounder for heavy cutting.

Frank Voigt

Technical data: P 500 Power

Turning diameter, max.	1,500 mm
Turning length	on customer request
Work piece weight, max.	50 t
Cutting force, max.	12 t
Torque at spindle stock, max.	50,000 Nm

On request, we can implement larger solutions.

Major greenfield project with Herkules machines in the USA

An ambitious project began in autumn 2014 on the banks of the Mississippi in Arkansas. Big River Steel broke ground on one of the largest and most modern rolling mills in North America. Herkules takes part in this major project with the supply of four roll grinding machines.

Initially, the new mill will produce 1.5 Mt of hot strip per year in different qualities. Part will be converted immediately to cold rolled and galvanized sheet.

Top quality machine tools are of the essence here. The products have to meet very demanding requirements. Cold-rolled carbon or silicon steel gets used in electrical applications such as rotating parts of motors. Hot-dip galvanized AHSS quality (Advanced High Strength Steels) cold strip goes particularly to the automobile industry, predominantly for structural parts. The US market for these products is growing again.

Competence from two continents

The high product quality requires excellent roll qualities. It puts high demands on the roll grinders. That is why Big River Steel obtained Herkules expertise. They ordered four grinding machines: two WS 600 x 6500 CNC universal roll grinding machines for backup and work rolls, and two WS 600 x 6500 CNC Monolith™ work roll grinders. All rolls can be machined with or without chocks, a major advantage in production efficiency. Furthermore, the Monolith™ design of the work roll grinders saves on foundation costs.

Two of the machines are manufactured at Herkules in Siegen, two at Herkules USA in Ford City, PA. The advantages for the customers are obvious. The double capacity of plants on both sides of the Atlantic guarantees quick delivery. The physical proximity allows for swift and straightforward service.

Quality prevails

In the project, Herkules supplies machines to SMS Millcraft LLC, a subsidiary of SMS Siemag, Düsseldorf, Germany. Big River Steel commissioned SMS Millcraft with the construction of all facilities, including electrical, automation and environmental technologies.

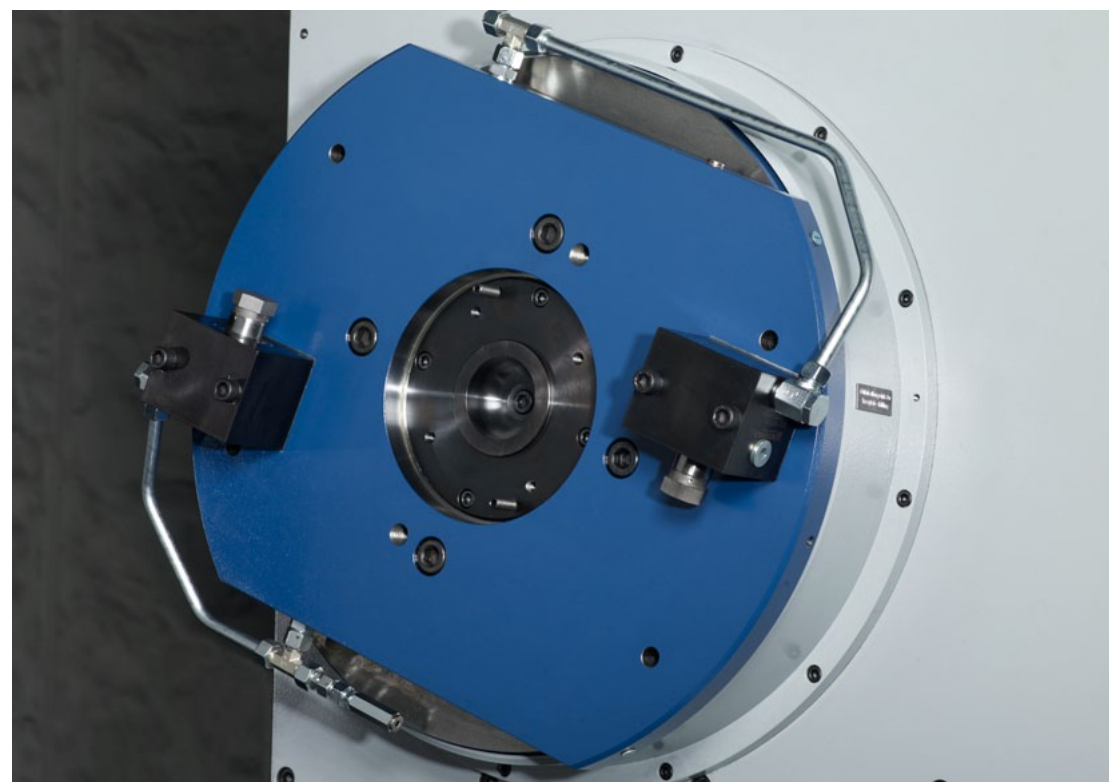
The quality and reliability of the Herkules products had impressed the SMS group before: Herkules already supplied several machines to the SMS group in Germany.

In Mississippi, the first steel is to be produced in spring 2016. The initial annual capacity is to be doubled in a later step. Herkules' participation in this project shows once again that quality prevails.

Dietmar Josche



High precision machining with a WS 600 Monolith™



Secure workpiece support for maximum force: face plate of the WS 600

Perfect rolls, the very best foil

Absolutely accurate roll geometry, exceptional surface quality – the aluminum industry faces ever more demanding requirements. Mills meet these demands with Herkules machines. 90% of all rolls used in foil production are ground with Herkules roll grinders. Hydro Aluminium Deutschland GmbH has relied on Herkules for many years. In summer 2014 it invested again in a WS 450 AL Monolith™ from the market leader.

Hydro Aluminium is a leading global producer of aluminum foil with a thickness of 6 µm and lithography strip with thicknesses of 0.1 to 0.5 mm. The new machine is the fourth Herkules machine at Hydro Aluminium, after a WS 400 and two WS 300 CNC.

Herkules specialists equipped the WS 450 AL Monolith™ with several accessories. It has a HCC/KPM CNC control, developed especially for machining rolls, as well as a HCC/KPM roll measuring system. With its three measuring probes, the roll measuring system allows for highly accurate measuring of the roll geometry and for “correction on the fly”. The machine is equipped with a roll surface inspection system (RSIS), which indicates even the minutest surface defects. The Monolith™ design of the grinder saves space and cost. It obviates the need for special machine foundations. It dramatically shortens installation time. The excellent damping characteristics of the vibration absorbing structure bring on a significant improvement in machining accuracy.

The optimal adaptation to the stringent requirements of the aluminum industry makes for accurate and efficient machining – a cornerstone of the customer’s competitiveness.

Frank Voigt



Precise grinding results meet exacting demands – WS 450 AL Monolith™

Roll grinders for ESP lines

Rizhao Iron & Steel ordered three work roll grinders from Herkules. The machines, of type WS 450 x 6000 CNC, will support the new Endless Strip Production (ESP) lines in Rizhao, Shandong province, China. After Arvedi in Italy, Rizhao is only the second producer to apply this technology.

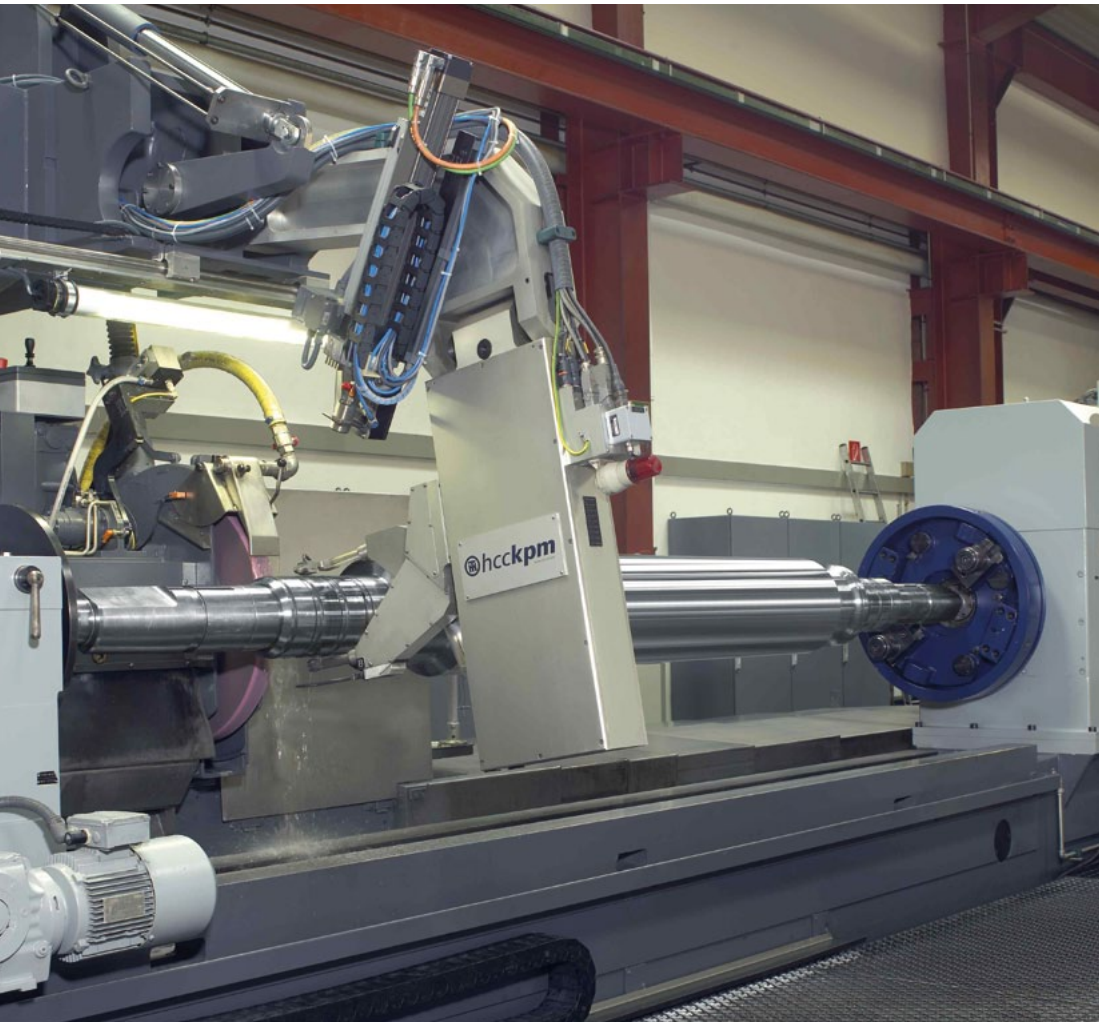
ESP, developed by Siemens VAI, combines casting and milling to produce hot rolled coiled coils from liquid steel in a continuous manufacturing process. Starting with a thin liquid strand, a multi-stage, uninterrupted process ultimately rolls out ultra-thin hot strip, with a reproducible thickness down to 0.8 mm.

This technology requires rolls of extraordinarily high quality. Rizhao opted for Herkules to get perfectly ground rolls. The Herkules machines guarantee consistent roughness over the entire barrel surface. This is essential in this demanding application. It minimizes slippage in the mill. Further factors favoring Herkules grinders were surface homogeneity and compliance with the tolerances, which apply to the entire length of strip.

The roll grinders will grind the rolls in chocks. This drastically reduces inventory of rolls and chocks.

Equipped with HCC/KPM KP 10 controls and a fully integrated HCC/KPM C-frame measuring system the Herkules roll grinders will reliably supply first class rolls over the coming decades.

Ralf Klews



Guaranteed top quality for high-end products – the WS 450

HerkulesGroup integrates SBA

On April 23, 2014, Herkules took over the majority of shares of the Austrian company SBA.

SBA Roll Shop Solutions has wide experience in the manufacture, modernization and maintenance of roll grinders. It has international customer contacts, especially in the paper industry. The acquisition of SBA in Weikersdorf, Austria, follows the Herkules-Group strategy of strengthening its global leadership in the manufacture of heavy machine tools, with the best technical solutions and the broadest portfolio. “SBA has many years of outstanding technical experience in the manufacture and modernization of roll grinders, especially for the paper and steel industries. Both the HerkulesGroup and our customers will benefit”, says Christoph Thoma, Chairman and CEO of the HerkulesGroup.

SBA will continue to operate as an independent company, specializing in modernization. The integration with the HerkulesGroup will strengthen the group’s expertise in the modernization of roll grinders.

Gert Allabauer, founder of SBA and president to date, stays on as president. Christoph Thoma will lend him his support in the management of the company.



Dronsfield roll grinder for the paper industry, modernized by SBA

Herkules

Investment in company machinery



New, high precision horizontal boring mill from UnionChemnitz at Herkules in Siegen.

Machine tools, which work to within a few microns, must also be made with precision. To ensure that all machine components meet the most stringent requirements, Herkules has made in-house production its hallmark. All key components of the machines are manufactured in-house and machined with utmost precision.

Herkules regularly invests in state of the art production machinery to stay at the cutting edge of technology. A new UnionChemnitz KC 130 horizontal boring mill was put into operation at Herkules Siegen in summer 2014.

The KC 130 features an automatic tool changer, automatic work piece measurement, a 3D radio touch probe, compact precision roller guides in all linear axes and longitudinal compensation of the boring spindle. The resulting high precision and production efficiency are put to good use in the machining of steady rests, thrust bearings, headstocks and tailstocks for Herkules machines.

The KC 130 is the second UnionChemnitz boring mill at Herkules. Another table type boring mill from Chemnitz has been in operation in Siegen since 2009.

Team work at TISCO

A large, empty hall. Some bicycles in the corner, work material along the walls. When Michael von Fintel arrives on site, he often finds silent, empty space. Here, heavy duty machine tools will be working only few months later. The Herkules mechanic was at Shanxi Taigang Stainless Steel Co. Ltd., a company of the TISCO group in Taiyuan, China. His task: install and commission four WS 250's and two WS 450's, a total of six roll grinding machines.



Michael von Fintel and employees of the customer during the installation of a WS 250....



.... and a fully assembled WS 450 for TISCO at Herkules before delivery.

Assembly started in spring 2014. Carried out in accordance with a proven protocol, supervised by experienced experts: Review of the foundation, cleaning the machine beds, step by step encapsulation of the workpiece bed, followed by assembly of the machine proper and, finally, the placement of the cover.

During the entire installation period, Michael von Fintel was on site, in charge of mechanical installation. Three employees from Maschinenfabrik Herkules in Siegen and Meuselwitz looked after the electrical and electronic installation. As on previous occasions, three experts from German Machine International Trading (Shanghai) provided valuable support. Not only did the colleagues of the HerkulesGroup service company help with the installation, they also facilitated the verbal communication. Explains Michael von Fintel: “We could communicate easily in English. Still, our customer was thankful we had our native Chinese speaking colleagues from GMT on the team. They could provide straightforward translations for special terms and phrases.”

Well ahead of schedule

Installation of the six roll grinders took only 60% of the scheduled time – a whopping time savings for the customer. Even so, the local conditions for the installation were quite challenging. The machines had to be installed in four different locations on the factory grounds.

The fact that the installation went so efficiently attests not only to the level of organization and preparation, but also to the extensive experience of the installation team. Michael von Fintel has been working in service for ten years. The cooperation was very smooth. Says Michael von Fintel: “Our customer provided us with many employees. They assisted us very efficiently. They were a valuable help.”

The new roll grinders have been machining rolls at Shanxi Taigang for the production of stainless steel and silicon plates since the end of summer. Meanwhile, these six machines bring the number of Herkules machines in use at Tisco to 39.

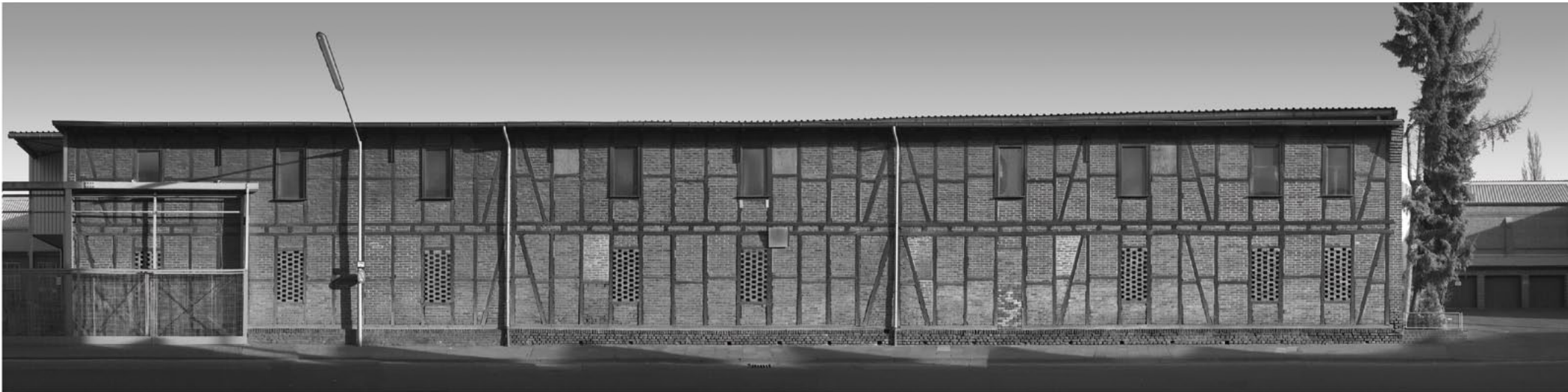
“Young Scientist” at Herkules Meuselwitz

On October 28, 2014, Maschinenfabrik Herkules Meuselwitz received “Jugend forscht” (Young Scientist) for the kick-off event of its East Thuringia regional competition. The organization has been a member of the WTC (Science and Transfer Center), which sponsors the project and provides organizational and financial support since its foundation in 1999. Anja Roessler, Head of the department Monolith™ Components Manufacturing at Herkules Meuselwitz, is engaged as a juror for the subject “work environments.”

The guests got introduced to Herkules Meuselwitz with a presentation and a company tour. President Michael Bergmann explained: “Young Scientist offers the perfect platform for young people to get their feet wet in the implementation of technical, mathematical or scientific ideas. It lets them experience the possibility of integration of their ideas in a professional working environment.”

Herkules

Architectural photography at Herkules



The industrial façade, by Bernd and Hilla Becher, world famous German photographers (Bernd was born in Siegen), took center stage in the field of architectural photography in the late 1950s. On the other hand, the doll-house like presentations of the Wandlitz-houses, by Andreas Mühe, who was born in Chemnitz, Germany, offer a more critical view of society. The 20 little pictures of staid houses of former GDR-officials, devoid of any individuality, recall the attitude of their occupants. Lastly, Martin Schäpers’ photomontage of a brick façade (shown above), prompted Herkules to hold a vernissage for these three contrasting works of art.

It takes an extraordinary occasion for Herkules to open its gates to employees on a Sunday. As Marita Thoma opened the vernissage on November 16, 2014, employees and friends interested in the arts, thronged into the foyer.

Martin Schäpers, architectural photographer from Siegen, in search of suitable objects for his photomontages, happened upon the half-timbered brick façade on the factory premises of Herkules. He was thrilled when Herkules offered him the opportunity to create a 5.40 m long wall-size aluminum Dibond version of his façade photo. In his speech, Schäpers emphasized that he felt more than honored to be shown together with his greatest idols, Bernd and Hilla Becher, in the art collection at Herkules.

On November 14, 2014, photographer Andreas Mühe received Germany’s most coveted photo prize, the Lead Award, for his trip in Germany with chancellor Merkel. This was published in all the media. But that he made a detour to Siegen on his way back from the award ceremony in Hamburg to Berlin, so he could witness the hanging of his Wandlitz photographs, this was known only to the guests at the vernissage.

HerkulesGroup

HerkulesGroup Kart Trophy 2014



The drivers pass the finish line at the HerkulesGroup Kart Trophy 2014

Siegen, May 24, 2014, 11 a.m.: The rumble and roar of gasoline powered engines filled the air over the grounds of Maschinenfabrik Herkules. The annual HerkulesGroup Kart Race is a yearly highlight for the members of the HerkulesGroup. This year 19 teams with 90 drivers from all German companies of the HerkulesGroup met the challenge: Four hours of thrilling struggles, sharp curves, fast stretches, tough duels and 332 tearing rounds later, the winners were finally declared and celebrated.

The sportsman’s competition is only one facet of the HerkulesGroup Kart Race: For drivers and spectators of the HerkulesGroup alike, it provides the perfect opportunity to mingle, get to know each other and grow closer together as a group.

Maschinenfabrik Herkules Hans Thoma GmbH

Eisenhüttenstraße 21
57074 Siegen · Germany

T: +49 (0) 271 6906 - 0
F: +49 (0) 271 6906 - 222
info@herkules-group.com

Maschinenfabrik Herkules Meuselwitz GmbH

Industriepark Nord
04610 Meuselwitz · Germany
mhm@herkules-group.com

Herkules USA Corp.

101 River Street
Ford City · Pennsylvania 16226 · USA
husa@herkules-group.com

Herkules USA Corp. d/b/a/ KPM

101 River Street
Ford City · Pennsylvania 16226 · USA
kpm@herkules-group.com

HCC/KPM LLC.

101 River Street
Ford City · Pennsylvania 16226 · USA
hcckpm@herkules-group.com

Deutsche Maschinen India Pvt. Ltd.

Palan Industrial Estate, Maheshtala
24 Parganas (South) · 700 141 · West Bengal · India
dmi@herkules-group.com

German Machine International Trading Co. Ltd.

No.108 Furun Nan Road
Jiaxing City · Zhejiang Province · 314000 · China
gmt@herkules-group.com

Jiaxing GMT German Machine Tools Co. Ltd.

No.108 Furun Nan Road
Jiaxing City · Zhejiang Province · 314000 · China
gmm@gmt-machines.com

Representative Offices:**Maschinenfabrik Herkules Latin America**

hla@herkules-group.com

Herkules North America Corp.

hna@herkules-group.com

Maschinenfabrik Herkules Asia Pacific Rep. Office

hap@herkules-group.com

Maschinenfabrik Herkules Shanghai Rep. Office

hrc@herkules-group.com

Maschinenfabrik Herkules East Rep. Office

hme@herkules-group.com

Maschinenfabrik Herkules India Rep. Office

hri@herkules-group.com

Maschinenfabrik Herkules Gulf Region

hgr@herkules-group.com

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T: +49 (0) 271 6906 - 0 · F: +49 (0) 271 6906 - 222

Responsible: HerkulesGroup Corporate Communications